Figure 1. The remote sensing instruments shown mounted in the twin engine aircraft. Inside the aircraft, the dual RGB/CIR imagers controls and monitors are shown in the rack mount (top left) with the lens viewing through the camera port in the belly of the aircraft (bottom left). The rack mount for the lidar controls and power supply are shown (top right) with the laser head and receiving telescope mounted behind to send and receive through the rear camera port (bottom right).

Figure 2. Day (yellow) and night (red) surveys flown in Kodiak over the period July 20 to 30, 2001. These surveys were conducted in coordination with Bob Foy's broadscale ship survey over eastern Kodiak.

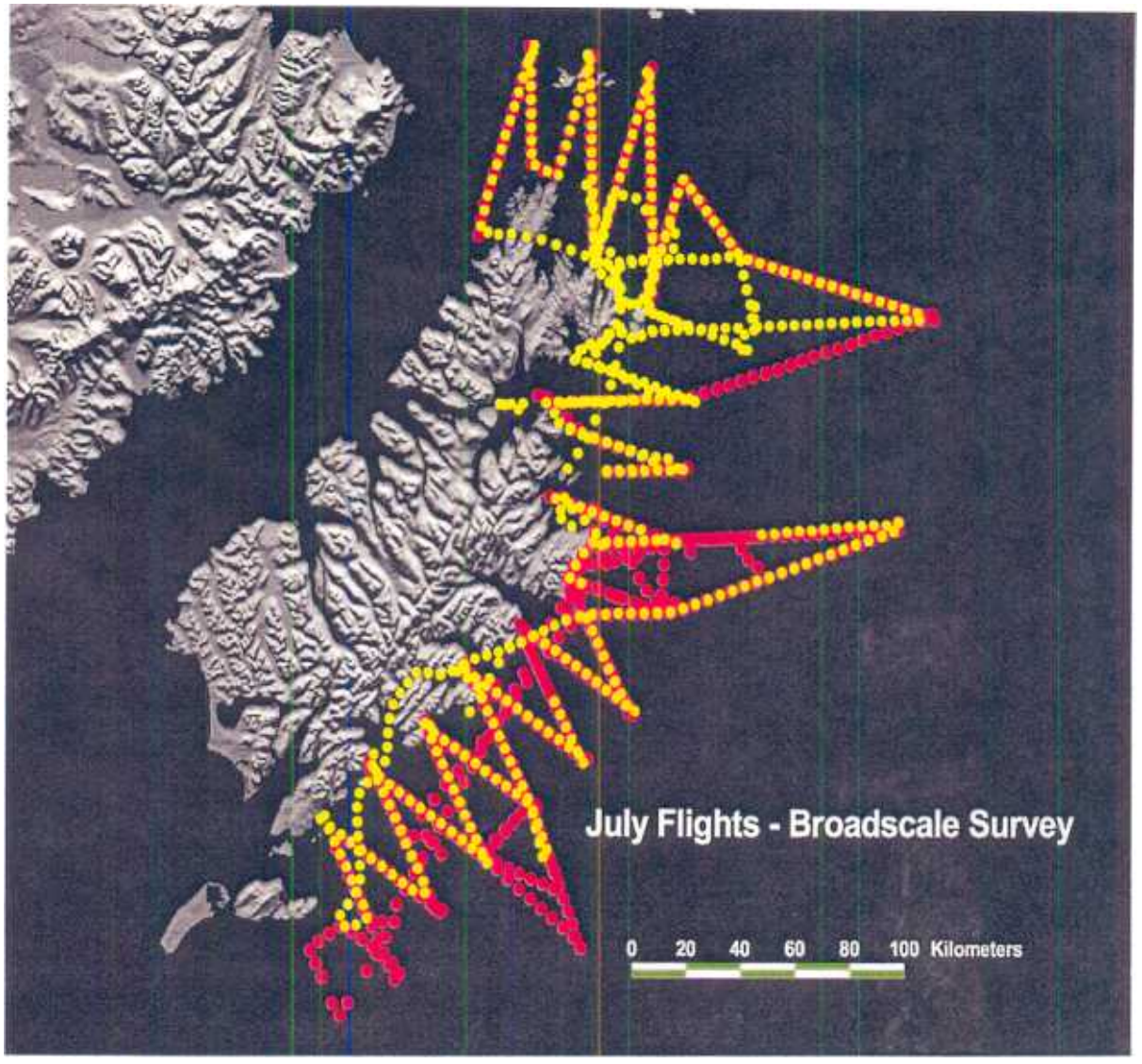


Figure 3. Day (yellow) and night (red) surveys flown over Chiniak and Barnabas Gullies off Eastern Kodiak Island from August 10 to 28, 2001 in coordination with the pre- and post-pollock fishery ship surveys conducted by Chris Wilson and Anne Hollowed.

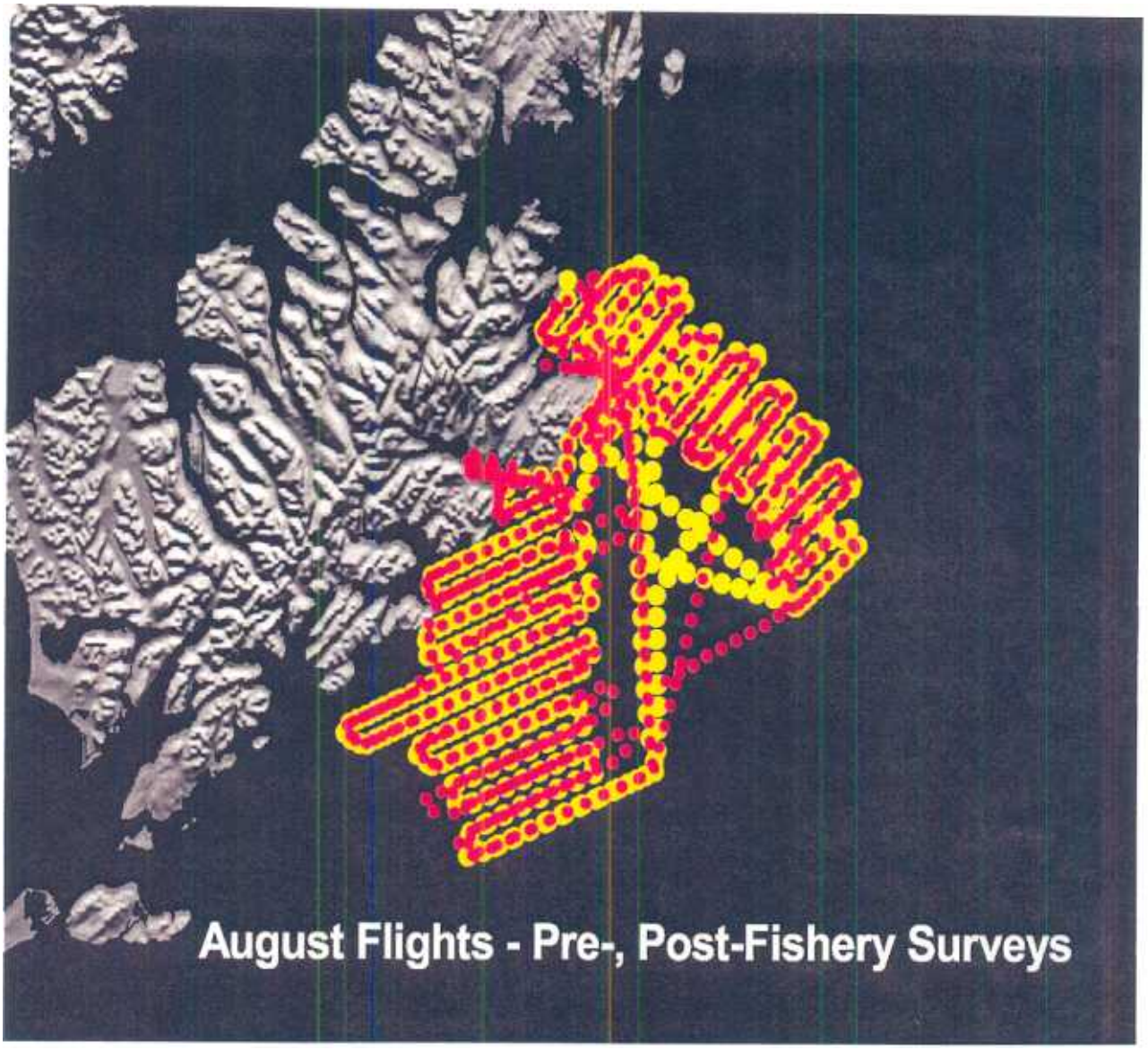


Figure 4. Day surveys flown over northern Southeast Alaska in Frederick Sound September 8-11, 2001 in coordination with the broadscale ship-board surveys conducted by Mike Sigler.

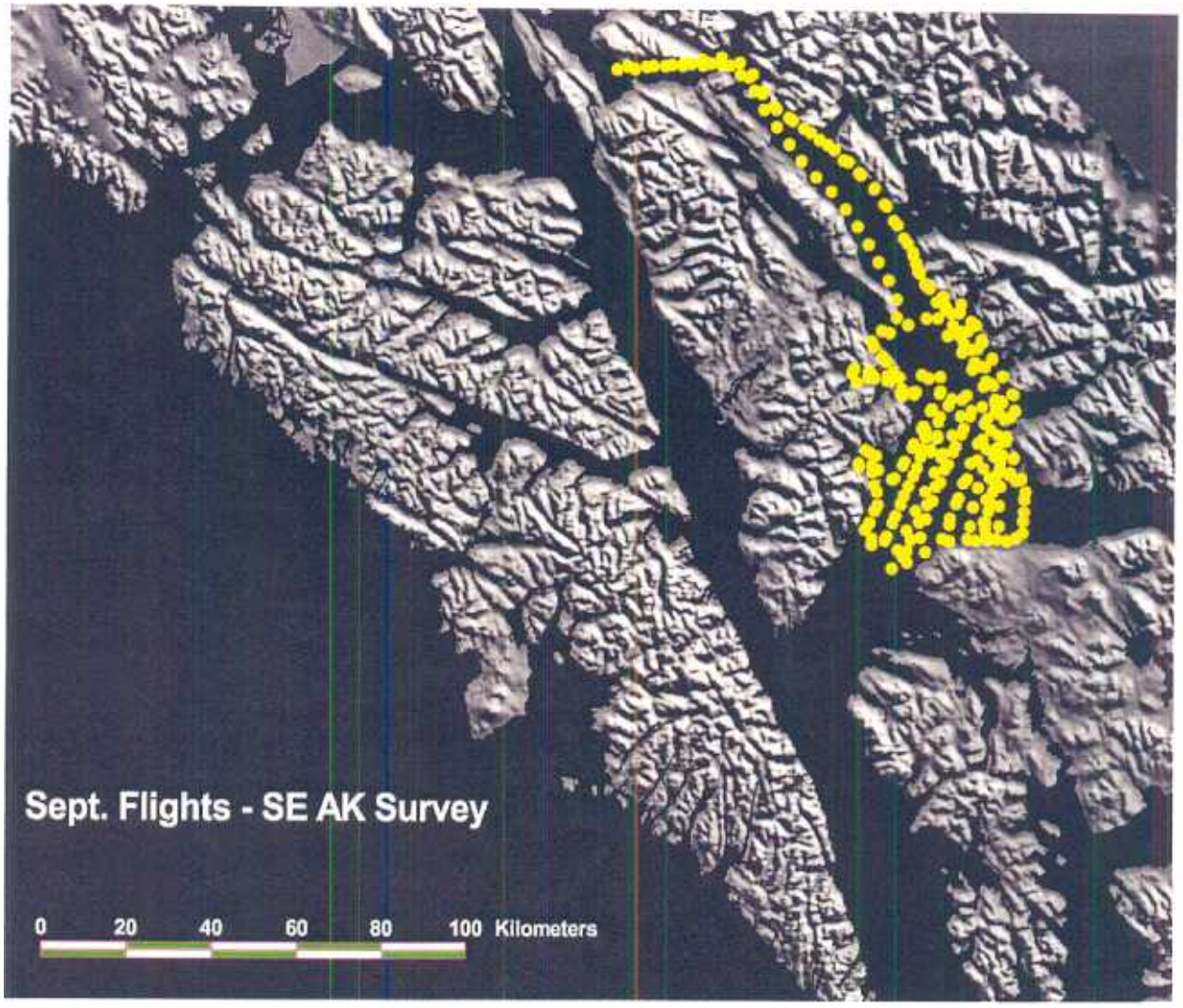
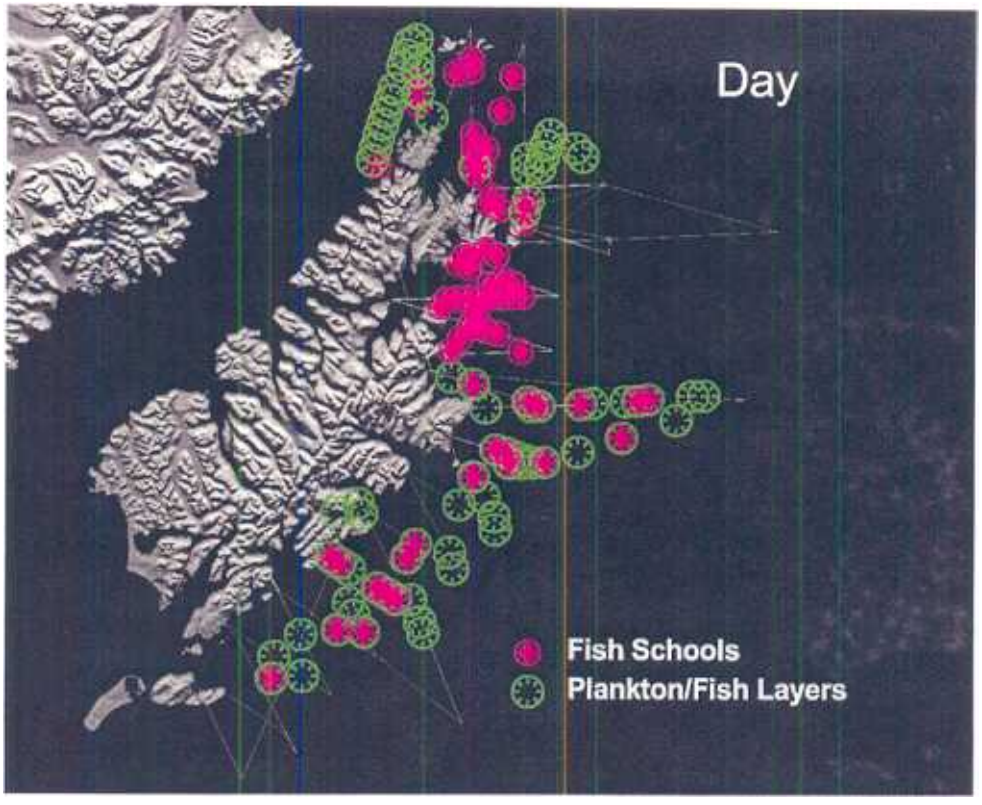


Figure 5. A day to night comparison in distribution of plankton layers (green circles) and fish aggregations (pink circles with diamonds) during the July survey period in Eastern Kodiak Island. Each day-night survey pair was completed within a 24 hr period. Each mark represents approximately 2 km along the survey track and indicates that the specified feature occurred within that area.



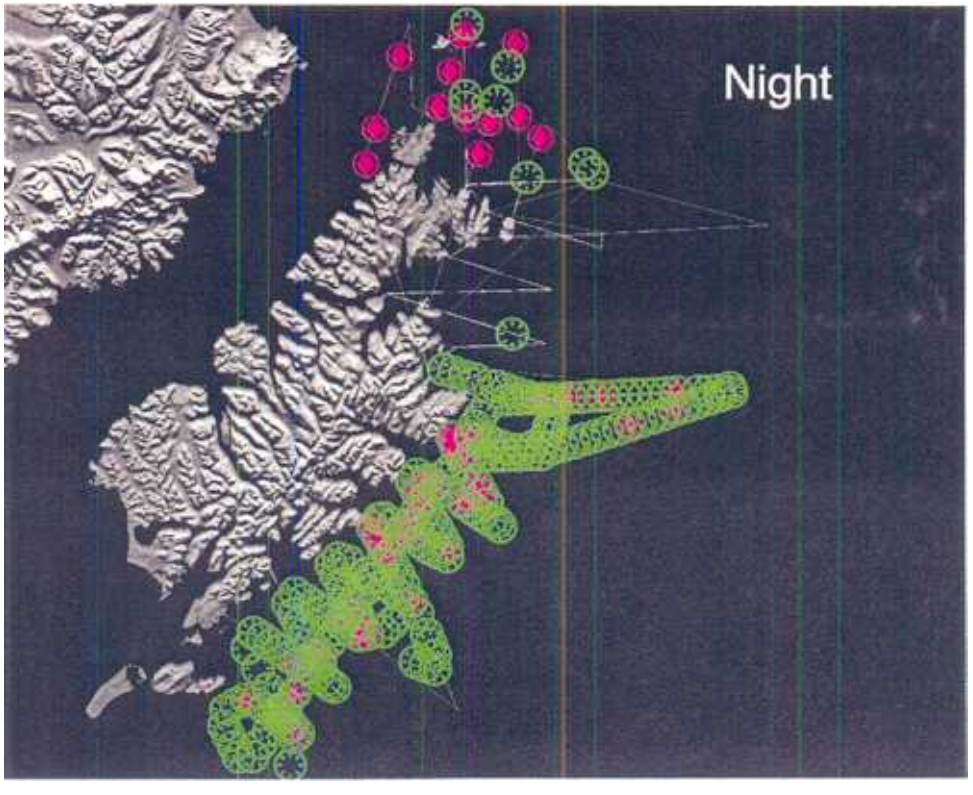


Figure 6. The along track depth penetration (top) of the lidar and integrated signal return through all depths (bottom) during the night survey on August 10, 2001 in Chiniak Gully. The level of the signal is related to the size or density of targets observed.

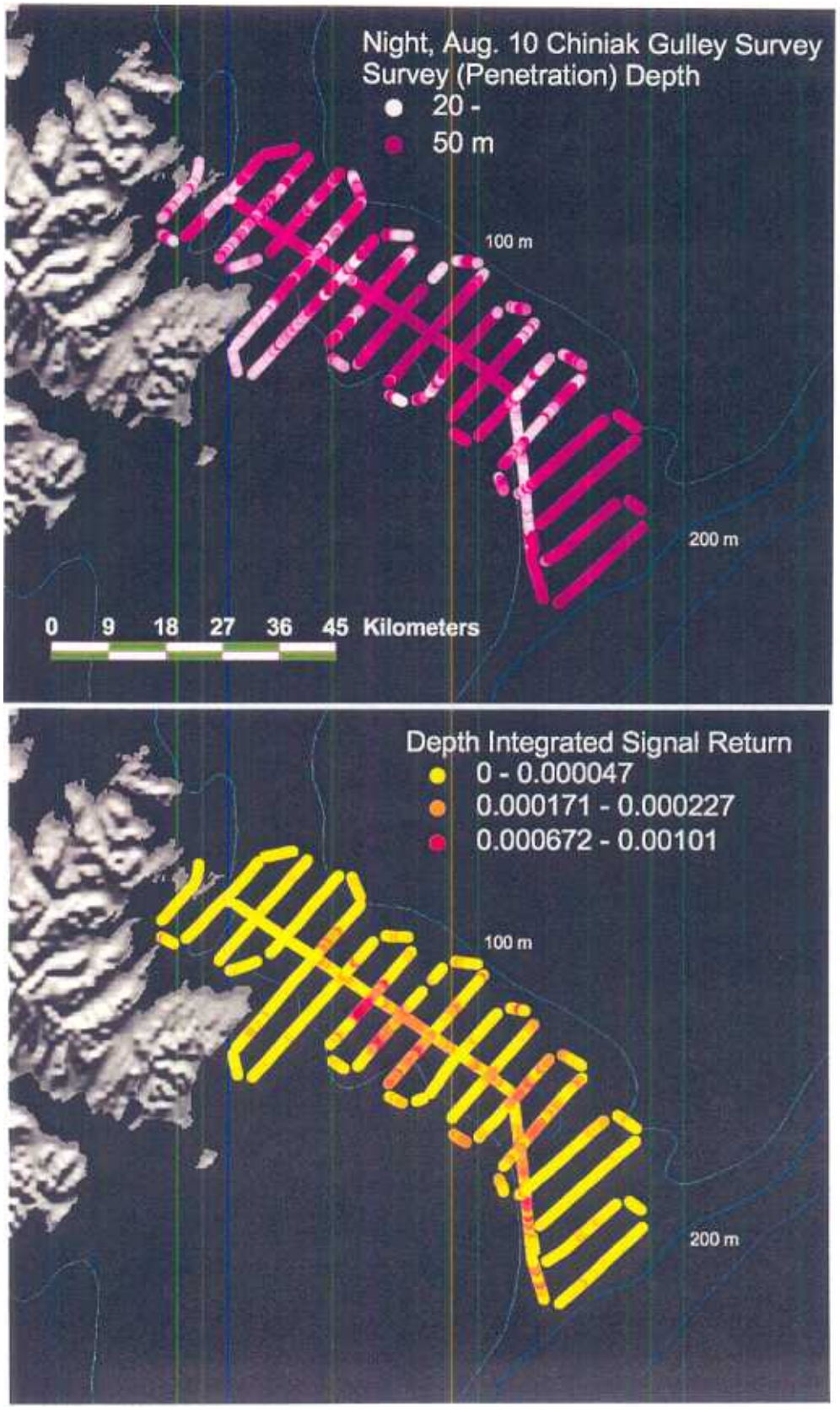


Figure 7. The maximum and average signal by depth at night over the entire survey area on August 10, 2001 in Chiniak Gulley.

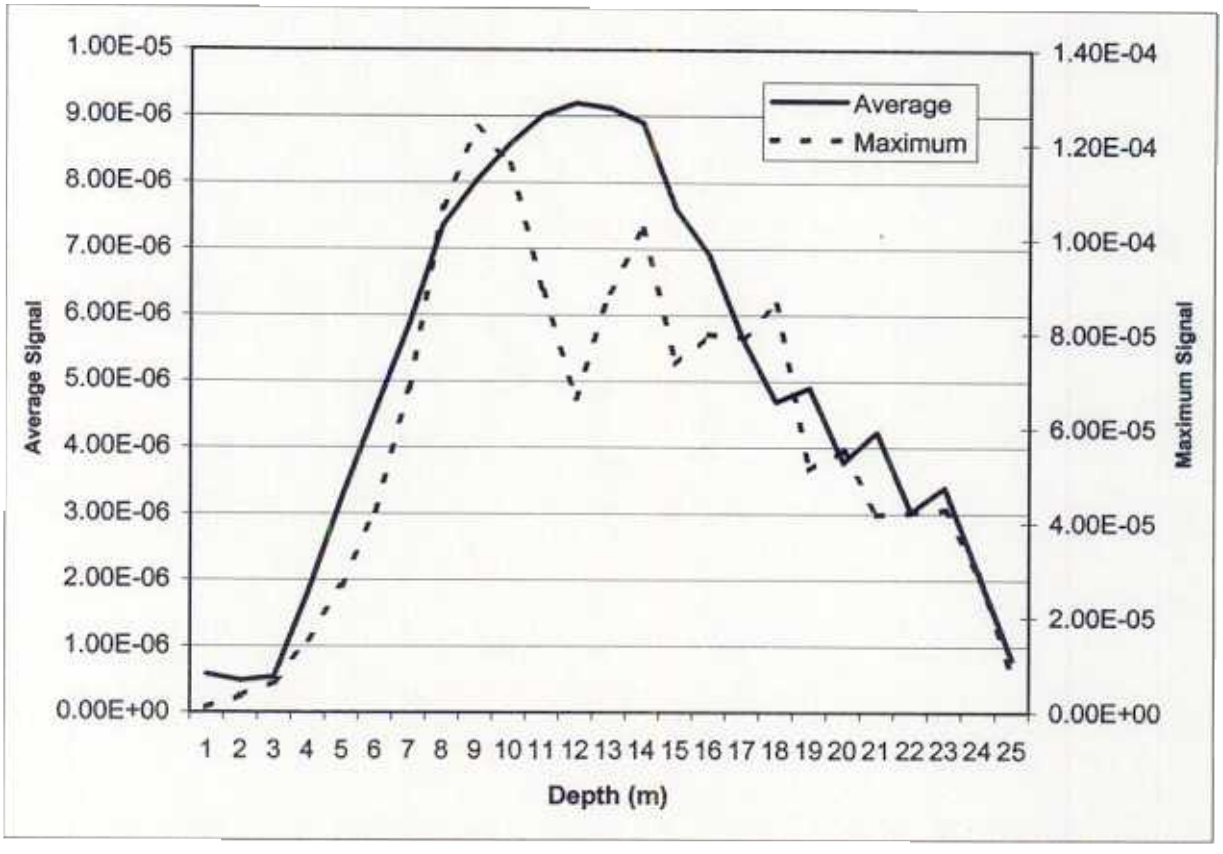


Figure 8. Spatial smoothing of signal intensity during the night survey on August 10, 2001 for the integrated signal between 0 and 25 m (upper right) and the depth specific data at 6, 9, 12, 14, and 18 m. The data was gridded at 1000m blocks and depths were chosen using Figure 6 and the depth at which the first peak maximum signal was observed (9 m), the peak of the mean signal (12 m), the second peak in maximum signal (14 m) and the third peak in maximum signal (18 m).

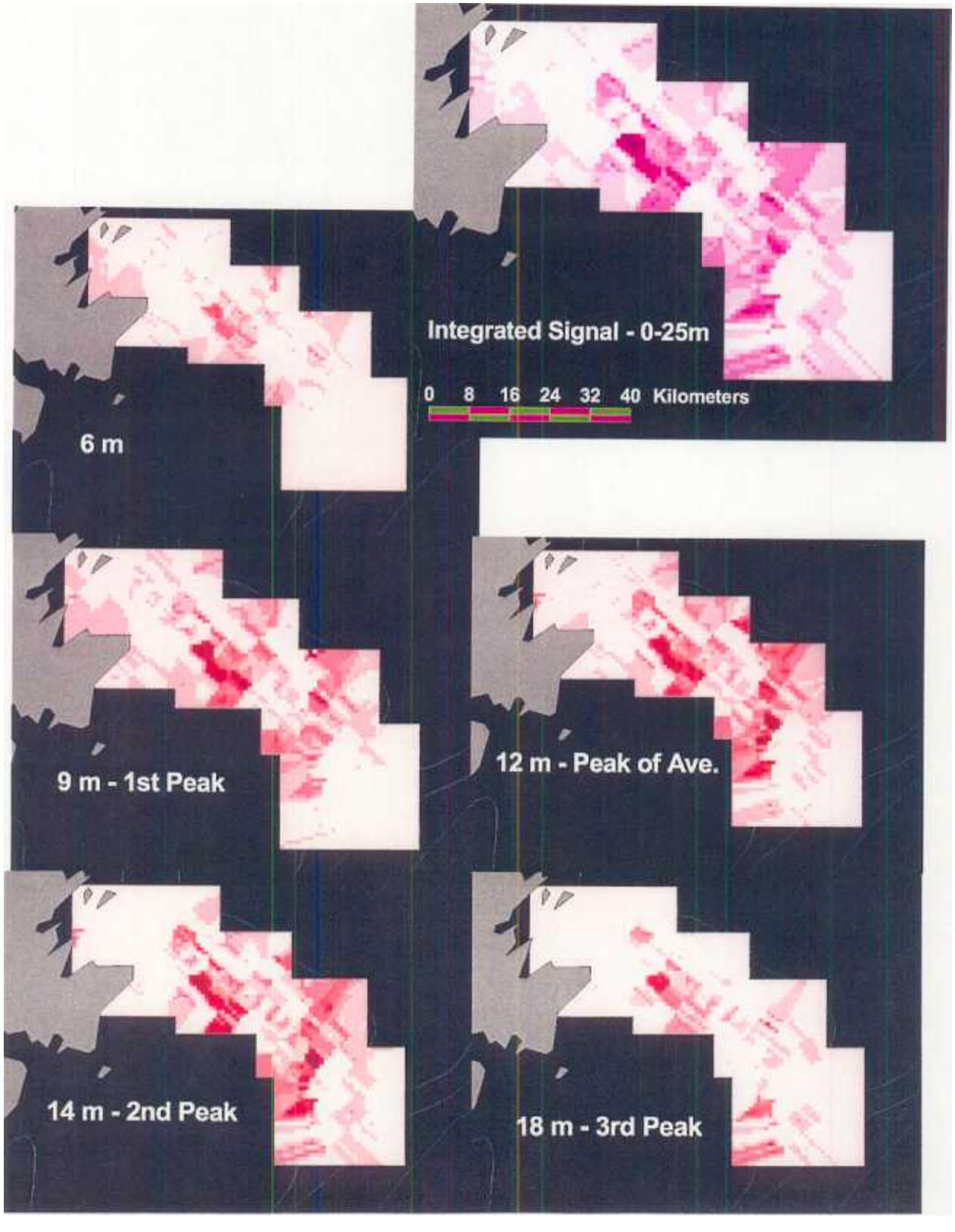


Figure 9. The thermal pattern left in surface waters following the traverse of a baleen whale, in this case either a grey or humpback whale).